

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

VAREX IMAGING CORPORATION, a Delaware
Corporation,

Plaintiff,

v.

RICHARDSON ELECTRONICS, LTD., a
Delaware Corporation,

Defendant.

Case No. 18-cv-6911

Judge John Robert Blakey

Magistrate Judge Sidney I. Schenkier

JURY TRIAL DEMANDED

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Varex Imaging Corporation (“Varex”) files this Complaint against Richardson Electronics, Ltd. (“Richardson”), alleging as follows:

THE PARTIES

1. Varex is a Delaware corporation with its principal place of business at 1678 South Pioneer Road, Salt Lake City, Utah 84104.

2. Richardson is a Delaware corporation with its principal place of business at 40W267 Keslinger Road, La Fox, Illinois 60147.

JURISDICTION AND VENUE

3. This action arises under the Patent Act, 35 U.S.C. § 101 *et seq.* This Court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

4. Venue is proper in this District pursuant to 28 U.S.C. § 1400(b). Richardson has committed acts of infringement in this District at its corporate headquarters in La Fox, Illinois, and this headquarters is a physical office that serves as the regular and established place of business of Richardson.

5. This Court has personal jurisdiction over Richardson. Richardson resides in, is at home in, and regularly and continuously conducts business in this District. Moreover, Richardson has infringed or induced infringement, and continues to do so, in this District at its La Fox, Illinois headquarters.

VAREX'S INNOVATIONS

6. Varex's experience in the medical device industry dates to the 1930s, when Eimac Products was founded to produce high-quality, high-power X-ray transmitter tubes. At the end of World War II, Eimac Products began to grow its business to include new tube types, such as cathode ray tubes and microwave tubes for radar applications. Eimac Products merged with Varian Associates in 1965, which later became Varian Medical Systems, Inc. ("Varian") in 1999. Varian thereafter emerged as an industry leader and innovator in the design and manufacture of key components of X-ray imaging systems, including X-ray tubes, digital flat-panel detectors, and other image processing solutions.

7. On January 28, 2017, Varex spun off from Varian to provide a business focused on the design and manufacture of X-ray imaging components.

8. Global manufacturers of X-ray imaging systems rely on Varex's experience designing and manufacturing X-ray sources, digital detectors, connecting devices, and imaging software as components in their X-ray systems.

9. Varian, and now Varex, has been awarded and continues to prosecute numerous patents covering innovations in the United States and around the world resulting directly from Varian's decades-long research and development efforts. It has sponsored the work of dozens of inventors and invested tens of millions of dollars in R&D efforts. Varex employs approximately 2,000 people and produces approximately 25,000 X-ray tubes and 23,000 X-ray panels each year. Varex operates in the state of Illinois employing individuals supporting sales, engineering, manufacturing, purchasing, planning, warehousing, finance, and quality functions.

10. One of Varex's most successful products is the MCS-7078 X-ray tube, which was the result of extensive research, development, and testing efforts by Varex's predecessor, Varian. Those efforts yielded numerous innovations and developments that resulted in reliable and accurate X-ray sourcing for use in the Toshiba / Canon Aquilion Computed Tomography ("CT") System. This X-ray tube was nicknamed "the Snowbird," a reference to the ski resort near Varian's (now Varex's) X-ray tube research, development, and manufacturing facilities in Utah.

11. The technology developed in concert with the Snowbird project resulted in the issuance of numerous patents from the United States Patent and Trademark Office ("USPTO"). These features include technology designed to handle the extreme amounts of heat generated by, and compact space requirements needed for, the X-ray tube in a CT scanner.

12. Since its introduction, the Snowbird X-ray tube has been one of Varex's flagship products, and it has an established record of success in the market.

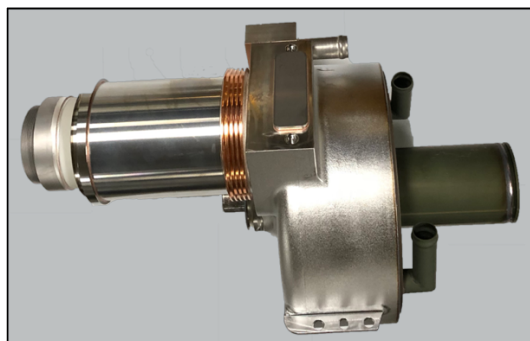
13. The Snowbird X-ray tube with a portion of the housing removed is shown below.



14. The Snowbird X-ray tube with the housing in place is shown below.



15. The Snowbird X-ray tube removed from the housing is shown below.



16. X-ray tubes are known within the industry to be consumables. In the lifespan of the CT scanner, it is expected that the X-ray tube will need to be replaced multiple times.

17. The inside of the X-ray tube must operate under an exceptional degree of vacuum. There are less air particles found within a given volume within the Snowbird X-ray tube than present in outer space.

18. The vacuum under which the Snowbird X-ray tube operates is critical because of the manner in which X-rays are generated. The electron source (also referred to as the cathode) in the Snowbird X-ray tube sends out a stream of electrons that are directed to a rotating anode. If optimal vacuum conditions are not maintained, particles will interfere with the electron path and prevent proper operation of the X-ray tube.

19. This bombardment of electrons against the target anode creates X-rays that scatter in all directions. Some X-rays will travel to and out of the “window” integrated into the X-ray tube vacuum enclosure. This is the one location in which the X-rays are to exit and pass out to be directed to the patient for CT scanning purposes. 99% of the electron energy becomes heat that needs to be removed from the X-ray tube.

20. Some of the heat absorption in the Snowbird X-ray tube is performed by a shield structure that has an aperture through which the electrons pass from cathode to anode, and employs a curved surface that will absorb the backscattered electrons and take on the heat. In the Snowbird X-ray tube, the shield structure is also designed to partially define a pathway for a coolant.

21. The interior of the Snowbird X-ray tube is encased by a vacuum enclosure. The Snowbird X-ray tube utilizes a metal enclosure that contains the components of the X-ray tube. The manufacturing process requires that the vacuum enclosure is brazed together, particles evacuated from the interior, and the X-ray tube is heated in excess of 1050 degrees Celsius for approximately 36 hours.

22. The Snowbird X-ray tube is not designed to be repaired or have a worn component individually replaced. The only way to access an internal component from a Snowbird X-ray tube is to cut it open. This destroys the X-ray tube's ability to function because it can no longer hold a proper vacuum. As soon the enclosure is opened in any small amount, the vacuum is eliminated and particles from the air enter, introducing contaminants and rendering the X-ray tube non-functional. (Dkt. 13, Dr. Bani-Hashemi Decl., ¶ 193.)

23. The Snowbird shield structure is brazed to portions of the vacuum enclosure to create an integrated assembly. Once the vacuum enclosure is compromised, a new shield structure needs to be manufactured. (*Id.*, ¶ 194.)

24. Merely repairing the vacuum is not sufficient. The other components would have to be reconditioned and put through the extensive cleaning and vacuum process necessary for an operable X-ray tube. (*Id.*, ¶ 195.)

25. Upon return of a spent Snowbird X-ray tube, Varex will scrap the X-ray tube insert and examine components to see if they can be refurbished and reused. The tube itself is destroyed.

26. Varex does not repair Snowbird X-ray tubes in manner involving replacement or repair of any individual parts within the X-ray tube. The metal

brazing of components, extensive demands for an exceptional vacuum inside the tube, and need to avoid impurities in the interior of the tube makes interior individual component replacement impractical.

PATENTS-IN-SUIT

27. On September 24, 2002, U.S. Patent No. 6,456,692 (“the ’692 patent”), titled HIGH EMISSIVE COATINGS ON X-RAY TUBE COMPONENTS, was duly issued to Ricky B. Smith.

28. Varex is the owner of all rights, title, and interest in the ’692 patent.

29. A true and correct copy of the ’692 patent is attached hereto as **Exhibit A** and is incorporated herein by reference.

30. The ’692 patent is generally directed towards an X-ray tube with a vacuum enclosure in which a cathode generates electrons that are converted into X-rays upon collision with a rotating anode, which is supported by a rotor incorporating a highly emissive coating, and in which the bearing assembly that supports the rotor is located at least partially within the rotating anode.

31. On February 11, 2003, U.S. Patent No. 6,519,317 (“the ’317 patent”), titled DUAL FLUID COOLING SYSTEM FOR HIGH POWER X-RAY TUBES, was duly issued to John E. Richardson, Gregory C. Andrews, Robert S. Miller, and Allen C. Campbell.

32. Varex is the owner of all rights, title, and interest in the ’317 patent.

33. A true and correct copy of the ’317 patent is attached hereto as **Exhibit B** and is incorporated herein by reference.

34. The '317 patent is generally directed towards a system and method for cooling a high-power X-ray tube in which an X-ray tube is disposed within a housing, a first coolant in the housing absorbs heat from the X-ray tube, and a second coolant flows through a passageway within the tube that directs the flow of the second coolant proximate to a portion of the X-ray tube.

35. The '692 patent and '317 patent are collectively referred to as the "Asserted Patents."

36. The Snowbird X-ray tube incorporates the emissive coating innovations of the '692 patent and the dual coolant innovations of the '317 patent.

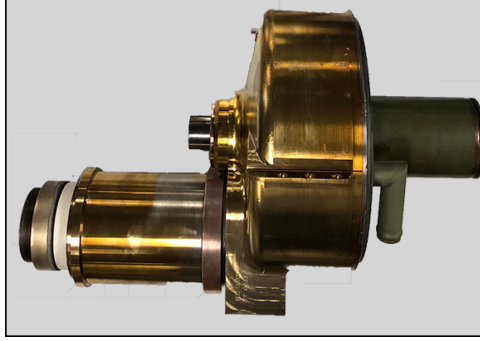
RICHARDSON'S INFRINGING ACTIVITIES

37. Richardson is in the business of manufacturing and selling aftermarket components for medical devices.

38. Richardson decided to manufacture and sell the ALTA750 because its most frequent request from customers was to provide a third-party alternative to the Snowbird X-ray tube. (See, e.g., **Exhibit C**, Transcript of Richardson Electronics Interview, *available at* https://www.youtube.com/watch?v=l_2b73V4K-s, at 8:5–11.)

39. The ALTA750 is the first all-new CT tube coming from Richardson. (*Id.* at 2:17-18.)

40. The ALTA750 X-ray tube shown below:



41. Richardson does not repair old Varex Snowbird X-ray tubes.

Richardson manufactures the ALTA750 as a new article through the combination of used and new components. (Dkt. 13, Dr. Bani-Hashemi Decl., ¶¶ 191-97, 200.)

42. Richardson manufactures for use in the ALTA750 vacuum enclosures, bearing assemblies, and electron sources that have the same dimensions as the analogous Varex components used in the Snowbird X-ray tube. Richardson also manufactures its own shield structure in the ALTA750 product that is integrated with its own vacuum enclosure, bearing assembly, and electron source. (*Id.*, ¶¶ 72–74, 83–85, 93–94.)

43. Richardson obtains used Snowbird X-ray tubes, cuts open the Snowbird X-ray tube destroying the vacuum enclosure and shield structure, and removes used anode assemblies and thermal disks. Components of the Snowbird X-ray tube other than the anode assembly and thermal disk are disposed of regardless of whether they are in working condition.

44. Richardson combines the parts scavenged from the Varex Snowbird X-ray tube with its newly manufactured components within an enclosure, which is then processed to ensure that the enclosed components operate in a vacuum. (*Id.* ¶¶ 71-96.)

45. The ALTA750 X-ray tube is then placed in a used Varex Snowbird X-ray tube housing, which is principally used as a barrier against radiation emitted from the X-ray tube, as shown below with added-on Richardson stickers:



46. The ALTA750 includes dielectric oil within the housing surrounding the X-ray tube. (*Id.* ¶¶ 77–79.)

47. The ALTA750 incorporates a second coolant composed of a mixture of propylene glycol and water that travels through the shield structure manufactured by Richardson and a thermal disk that Richardson salvages from used Snowbird X-ray tubes. (*Id.*, ¶¶ 80–82, 89–74, 90, 103, 104.)

48. Aware of Varex’s patents, Richardson nonetheless is attempting to obtain a foothold in the CT scanner X-ray tube market through misappropriation of Varex’s intellectual property.

49. Even the name chosen by Richardson for its knock-off X-ray tube—the ALTA750—is an attempt to exploit Varex’s intellectual property and goodwill: Alta is a sister ski resort to the Snowbird ski resort in Utah.

50. The ALTA750 X-ray tube sold by Richardson is not a Snowbird X-ray tube previously sold by Varex. The ALTA750 X-ray tube is a knock-off of the

Snowbird X-ray tube, newly manufactured to compete with the OEM Snowbird X-ray tubes sold by Varex to Canon.

51. Richardson's business process in manufacturing ALTA750 X-ray tubes is based on procuring spent Snowbird X-ray tubes and dissecting those spent X-ray tubes to identify parts that can be reused. Richardson does not even attempt to make a spent Snowbird X-ray tube functional for continued use.

52. While certain components are scavenged from used Snowbird X-ray tubes, the ALTA750 X-ray tube is a distinct and separate article of manufacture. The nature of the actions Richardson takes to create the ALTA750 is to make a new product, a second creation of the patented article. Richardson creates an entirely new enclosure, bearing assembly, and other components, and then heats and evacuates the assembly to create vacuum, because it is more practical and efficient to simply create a new X-ray tube. The requirements of maintaining a vacuum within the X-ray tube alone suggest that attempts at repairing a used Snowbird X-ray tube by cutting it open, identifying the faulty component, replacing the component, and resealing the vacuum enclosure would be much more challenging than simply scavenging parts that can be reused and building a new X-ray tube. (*Id.*, ¶ 196.)

53. None of the scavenged parts alone or in combination with other parts scavenged by Richardson from used Snowbird X-ray tubes (namely, the housing, the anode assembly, and the thermal disk) provide all the elements of any of the asserted claims. (*Id.*, ¶ 197.)

54. For example, the vacuum enclosure, an element of at least claim 1 of the '692 patent, is entirely new, machined by Richardson. While it is designed to be a copy of the Snowbird X-ray tube vacuum enclosure, it is a wholly new component. The size and dimensions of the ALTA750's vacuum enclosure are identical to those of Varex's Snowbird. (*Id.*, ¶¶ 72, 73, 122, 123.)

55. The vacuum enclosure is a necessary component of any X-ray tube. Richardson creates a wholly new vacuum-enclosed X-ray tube that has never been sold by anyone previously. (*Id.*, ¶¶ 72, 73, 123, 195.)

56. When Richardson newly manufactures its X-ray tube, Richardson supplies a new electron source, an element of at least claim 1 of the '692 patent. (*Id.*, ¶¶ 74, 123–25.)

57. When Richardson newly manufactures its X-ray tube, Richardson supplies a new bearing assembly and disposes it within its X-ray tube such that it rotatably supports the rotor and is at least partially received within the tube's anode, an element of at least claim 1 of the '692 patent. (*Id.*, ¶¶ 93, 106, 128, 131.)

58. When Richardson newly manufactures its X-ray tube, Richardson deposits its new dielectric oil into the housing and its new propylene/glycol mixture to circulate within the vacuum-enclosed portion of the X-ray tube, as recited in at least claim 34 of the '317 patent. (*Id.*, ¶¶ 101, 104, 105.)

59. When Richardson newly manufactures its X-ray tube, Richardson machines a new shield structure and assembles it between the X-ray tube's anode and the electron source newly machined by Richardson, as recited in at least claim 34 of the '317 patent. However, Richardson omits the separately patented external

fins on the shield structure that Varex employs in the Snowbird X-ray tube for improved heat dissipation. Richardson's shield structure is entirely new, machined by Richardson. (*Id.* ¶¶ 72, 73, 94, 95, 103.)

60. Shown below are a Varex MCS-7078D "Snowbird" X-ray tube on the left and a Richardson ALTA750 X-ray tube on the right.



(*Id.* ¶ 73.)

61. The ALTA750 X-ray tube is a blatant copy in many respects, but it is not a Snowbird X-ray tube. ALTA750 X-ray tubes have not been previously sold by Varex nor does Richardson present the ALTA750 X-ray tube to customers as repair, modification, or remanufacture of Snowbird X-ray tubes.

62. Richardson has repeatedly admitted that its ALTA750 X-ray tube is a newly manufactured replacement tube.

63. As of October 15, the date on which Varex filed its original complaint, Richardson advertised that "[t]he ALTA750 is a new CT tube specifically designed for use as a replacement tube for the Toshiba/Canon Medical Systems CXB-750D/4A tube, also known as the Varex Imaging MCS-7078." (Attached hereto as **Exhibit D**

are true and correct screenshots of pages from Richardson's website as of October 15, 2018.)

64. Richardson promoted the ALTA750 as a "form, fit and function replacement for . . . the Varex Imaging MCS-7078 tube." (Ex. D at 1; *see also* Ex. C at 9:2–4.)

65. Richardson further advertised the ALTA750 as a "newly manufactured" X-ray tube. (Ex. D at 2; *accord* Ex. C at 3:8–4:1.)

66. There is no recognized industry or market for repair of Snowbird X-ray tubes in which a service provider identifies a worn component within a Snowbird X-ray tube, replaces that component, and then returns the Snowbird X-ray tube to its owner.

67. Richardson does not attempt to identify and repair only those parts needing replacement in making the ALTA750 X-ray tube. Richardson admits that it scraps the entire tube frame, bearings, filaments from the spent Snowbird tube regardless of whether they are capable of reuse. (*See* Dkt. 32, Ex. H, ¶¶ 14, 17.)

68. After Varex filed its original Complaint in this action, Richardson attempted to hide these admissions fatal to its proposed affirmative defense of patent exhaustion by scrubbing them from its website. (Attached hereto as **Exhibit E** are true and correct screenshots of pages from Richardson's website as of November 1, 2018.)

69. A comparison of the Richardson website as of October 15, 2018 and November 1, 2018 is shown below.

<https://www.rellhealthcare.com/ALTA750>

October 15, 2018

November 1, 2018

OVERVIEW

- + Designed to meet or exceed the performance of the original OEM tube.
- + A newly manufactured Richardson Healthcare ALTA750 replacement vacuum tube assembly is loaded into an OEM housing, to ensure full compatibility with the OEM CT system.
- + FDA Registered
- + The ALTA750 comes with a warranty period of 12 months or 200,000 rotations, whichever comes first.
- + For a limited time, we will provide a 90-day Complete Satisfaction Guarantee: Customers for the ALTA750 will receive a 90-day, no questions asked, Complete Satisfaction Guarantee on their first tube purchased! Ask us for more details.
- + The new ALTA750 tube is also available through our P3 Preferred Parts Partnership program. Contact us for more information about our P3 options and a quote today!

Date Varex Files Complaint

OVERVIEW

- + Designed to meet or exceed the performance of the original OEM tube.
- + The Richardson Healthcare ALTA750 replacement vacuum tube assembly is loaded into an OEM housing, to ensure full compatibility with the OEM CT system.
- + FDA Registered.
- + The ALTA750 comes with a warranty period of 12 months or 200,000 rotations, whichever comes first.
- + For a limited time, we will provide a 90-day Complete Satisfaction Guarantee: Customers for the ALTA750 will receive a 90-day, no questions asked, Complete Satisfaction Guarantee on their first tube purchased! Ask us for more details.
- + The ALTA750 tube is also available through our P3 Preferred Parts Partnership program. Contact us for more information about our P3 options and a quote today!

Date of Richardson's Motion to Dismiss

<https://www.rellhealthcare.com/store/ALTA750>

October 15, 2018

November 1, 2018

The ALTA750 is a new CT tube specifically designed for use as a replacement tube for the Toshiba/Canon Medical Systems CXB-750D/4A* tube, also known as the Varex Imaging MCS-7078*.

Qty: ADD TO QUOTE

Date Varex Files Complaint

The ALTA750 CT tube is specifically designed for use as a form-fit-function replacement tube for the Toshiba/Canon Medical Systems CXB-750D/4A* tube, also known as the Varex Imaging MCS-7078*.

Qty: ADD TO QUOTE

Date of Richardson's Motion to Dismiss

70. Notwithstanding its remove of “newly manufactured” and “new” Richardson still promotes the ALTA750 as a “replacement” for Varex’s MCS-7078 Snowbird X-ray tube. (Ex. D; Ex. E.)

71. Richardson, during its October 11, 2018 earnings call, stated:

We are increasingly selling **new** ALTA tubes instead of certified pre-owned OEM tubes, but we still see a market for pre-owned tubes going forward and we'll continue to offer these as an option for customers who do not have the budget for a new [tube].

(**Exhibit F**, transcript of Richardson Q1 2019 Results – Earnings Call, available at <https://seekingalpha.com/article/4211213-richardson-electronics-ltd-rell-ceo-edward-richardson-q1-2019-results-earnings-call> (last accessed November 27, 2018), at 9 (emphasis added).)

72. In contrast to those “certified pre-owned OEM tubes” that are resold by Richardson, the ALTA750 is a new tube that carries a higher price because it is a new piece of equipment, not a used tube. (*Id.*)

73. During that same earnings call, Richardson stated:

I'm happy to report that we began shipments of our **newly manufactured** CT tube, the ALTA750 for revenue during the first quarter.

...

To be clear, we don't intend to compete with our third party service partners but in these instances we are bringing good business opportunities to them and it has been well received.

(*Id.* at 7, 8 (emphasis added).)

74. Further, in its July 26, 2018 earnings call, Richardson explained:

At the end of the quarter, our Healthcare Group announced the launch of our new CT tube, the ALTA750, which is a **replacement** for the Toshiba Cannon Medical Systems CXB750D. Up until now, there's been no third-party tube available to **replace** the CXB750D. This was a huge milestone for the company. Richardson Electronics is now part of a very elite group of global companies with the engineering and **manufacturing expertise capable of producing new CT tubes.**

(**Exhibit G**, transcript of Richardson Q4 2018 Results – Earnings Call, <https://seekingalpha.com/article/4191569-richardson-electronics-ltd-rell-ceo-edward-richardson-q4-2018-results-earnings-call> (last accessed November 27, 2018), at 2 (emphasis added).)

75. The ALTA750 is not a repair, refurbishment, restoration, resale, or remanufacture of the Snowbird X-ray tube. It is a new article of manufacture that is designed as a replacement for the Snowbird X-ray tube. (*See generally* Exs. C–G.)

76. Richardson has never advertised the ALTA750 as a repaired or reconditioned X-ray tube, a refurbished X-ray tube, a restored X-ray tube, a resold X-ray tube, or a remanufactured X-ray tube. The ALTA750 X-ray tube sold by Richardson is a new article of manufacture; it is not a Snowbird X-ray tube that was previously sold by Varex.

77. Instead of developing its own technology, Richardson obtained one or more samples of Varex’s Snowbird X-ray tube, which Richardson reverse engineered to manufacture the ALTA750.

78. None of the components reused by Richardson themselves read on the Asserted Claims.

COUNT I

Infringement of U.S. Patent No. 6,456,692

79. Varex repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

80. The USPTO duly and legally issued the ’692 patent on September 24, 2002. Varex is the legal owner of the ’692 patent.

81. Richardson has infringed and continues to infringe at least claims 1, 3, 6, 7, and 12 of the '692 patent in violation of 35 U.S.C. § 271(a).

82. Exemplary claim 1 of the '692 patent is reproduced below:

An x-ray tube comprising:

a vacuum enclosure having an electron source and anode disposed therein, said anode having a target surface positioned to receive electrons emitted by said electron source;

a rotor at least partially received within said anode, and wherein the rotor is operably connected to the anode;

a bearing assembly rotatably supporting said rotor and at least partially received within said anode so that said rotor is at least partially interposed between said bearing assembly and said anode; and

an emissive coating disposed on at least a portion of said rotor that is disposed within the anode, the coating being comprised of a material that increases the emissivity of the rotor surface.

83. Richardson's ALTA750 X-ray tube incorporating a newly manufactured bearing assembly, electron source, and vacuum enclosure with a target anode assembly taken from a used Varex Snowbird X-ray tube, includes all of the elements claims 1, 6, 7 and 12 of the '692 patent.

84. Richardson's ALTA750 X-ray tube incorporating a newly manufactured bearing assembly, electron source, and vacuum enclosure with a target anode assembly and thermal disk taken from a used Varex Snowbird X-ray tube, includes all of the elements claim 3 of the '692 patent.

85. The ALTA750 X-ray tube is manufactured as a new article, including a new vacuum enclosure and a new bearing assembly that are brazed together with other components, such as new fluid pathway components and a new electron

source, that undergoes extensive evacuation and heating procedures. The ALTA750 undergoes the new manufacturing process required to create the requisite vacuum conditions within the tube using new components that are included regardless of whether recycled components are in sufficient condition to be repurposed from a used X-ray tube.

86. Richardson does not utilize any portion of the Varex Snowbird X-ray tube vacuum enclosure, bearing assembly, shield structure, or electron source in making the ALTA750, even if those parts were in acceptable working condition. These parts are reverse engineered and sourced from Richardson to make a “new” “replacement” tube as an alternative to the OEM product.

87. Richardson had actual knowledge of the '692 patent, but nonetheless chose to make, use, sell, and offer for sale the ALTA750.

88. Richardson has directly infringed and continues to infringe one or more claims of the '692 patent, either literally or under the doctrine of equivalents, as a result of Richardson making, using, importing, selling, and/or offering for sale infringing products, including the ALTA750, without the permission, consent, authorization, or license of Varex.

89. As a result of Richardson's unlawful activities, Varex has suffered and will continue to suffer irreparable harm for which there is no adequate remedy at law unless and until infringement is enjoined by this Court. Varex is entitled to preliminary and permanent injunctive relief in accordance with 35 U.S.C. §§ 271, 281, and 283.

90. Richardson's infringement of the '692 patent has also injured and continues to injure Varex in an amount to be proven at trial, but not less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, and 284.

91. Richardson has been aware of Varex's patents, including the '692 patent, and has nonetheless continued its infringing activity. Despite its knowledge of Varex's patent portfolio and the Asserted Patents, Richardson has sold and continues to sell the Accused Products in complete and reckless disregard of Varex's rights. Accordingly, Richardson has acted recklessly and continues to willfully, wantonly, and deliberately engage in acts of infringement of the '692 patent, justifying an award to Varex of enhanced damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

COUNT II

Infringement of U.S. Patent No. 6,519,317

92. Varex repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

93. The USPTO duly and legally issued the '317 patent on February 11, 2003. Varex is the legal owner of the '317 patent.

94. Richardson has infringed and continues to infringe at least claims 34–37 of the '317 patent in violation of 35 U.S.C. § 271(a) and (b).

95. Exemplary claim 34 is reproduced below:

An x-ray device, comprising:

(a) an x-ray tube substantially disposed within a housing;
and

(b) a cooling system, the cooling system including:

(i) a first coolant disposed in the housing so that at least a portion of heat dissipated by the x-ray tube is absorbed by the first coolant; and

(ii) at least one fluid passageway capable of directing a flow of a second coolant proximate to at least a portion of the x-ray tube so that at least a portion of heat dissipated by the x-ray tube is absorbed by the second coolant, the at least one fluid passageway being at least partially defined in a shield structure disposed between a target anode and an electron source of said x-ray tube.

96. Richardson's ALTA750 X-ray tube incorporating a newly manufactured X-ray tube including a passageway partially defined in a shield structure manufactured by Richardson that is disposed between the target anode taken from a Varex Snowbird X-ray tube and an electron source procured by Richardson, along with first and second coolants provided by Richardson, and Richardson's placement of these components within a Varex external housing, includes all of the elements of claims 34, 36, and 37 of the '317 patent.

97. Richardson's ALTA750 X-ray tube incorporating a newly manufactured X-ray tube including a passageway partially defined in a shield structure manufactured by Richardson that is disposed between the target anode taken from a Varex Snowbird X-ray tube and an electron source procured by Richardson, Varex's thermal disk connected to Richardson's newly manufactured shield structure, first and second coolants provided by Richardson, and Richardson's placement of these components within a Varex external housing, includes all of the elements of claim 35 of the '317 patent.

98. The ALTA750 X-ray tube is manufactured as a new article, including a new vacuum enclosure and a new shield structure that are brazed together with other components, such as new fluid pathway components, bearing assembly, and a

new electron source, that undergoes extensive evacuation and heating procedures. The ALTA750 undergoes the new manufacturing process required to create the requisite vacuum conditions within the tube using new components that are included regardless of whether recycled components are in sufficient condition to be repurposed from a used X-ray tube.

99. Richardson does not utilize any portion of the Varex Snowbird X-ray tube vacuum enclosure, bearing assembly, or shield structure, even if those parts were in acceptable working condition. These parts are reverse engineered and sourced by Richardson to make a “new” “replacement” tube as an alternative to the OEM product.

100. Richardson had actual knowledge of the '317 patent prior to introducing the ALTA750 for commercial sale on or about June 2018.

101. Richardson has directly infringed and continues to directly infringe, either literally or under the doctrine of equivalents, as a result of Richardson making, using, importing, selling, and/or offering for sale infringing products, including the ALTA750, without the permission, consent, authorization, or license of Varex.

102. Richardson has actively and knowingly induced, and continues to actively and knowingly induce, the infringement of one or more claims of the '317 patent, either literally or under the doctrine of equivalents, as a result of Richardson instructing, directing, and/or requiring others, including its customers, purchasers, and users, to perform the steps of the claimed methods or combine the requisite claim elements, resulting in direct infringement.

103. Richardson offers to the engineers of its customers, purchasers, and users “resources to support you as you prepare to enter the Toshiba CT service market.” (See **Exhibit H**, Toshiba CT Training – US, *available at* <https://www.rellhealthcare.com/training-us> (last accessed at October 15, 2018) at 1.) Richardson’s program provides training in, among other things, “[s]ystem operation,” “[c]alibration,” “[d]iagnostic procedures,” and “[t]roubleshooting” to ensure that its customers, purchasers, and users practice the claims of the ’317 patent. (*Id.*)

104. As a result of Richardson’s unlawful activities, Varex has suffered and will continue to suffer irreparable harm for which there is no adequate remedy at law unless and until infringement is enjoined by this Court. Varex is entitled to preliminary and permanent injunctive relief in accordance with 35 U.S.C. §§ 271, 281, and 283.

105. Richardson’s infringement of the ’317 patent has also injured and continues to injure Varex in an amount to be proven at trial, but not less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, and 284.

106. Richardson has been aware of Varex’s patents, including the ’317 patent, and has nonetheless continued its infringing activity. Despite its knowledge of Varex’s patent portfolio and the Asserted Patents, Richardson has sold and continues to sell the Accused Products in complete and reckless disregard of Varex’s rights. Accordingly, Richardson has acted recklessly and continues to willfully, wantonly, and deliberately engage in acts of infringement of the ’317 patent,

justifying an award to Varex of enhanced damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, Varex prays for judgment and relief as follows:

- A. A determination that Richardson has infringed and is infringing the '692 and '317 patents;
- B. A preliminary and permanent injunction against Richardson and its officers, employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from infringing the '692 and '317 patents, and for all further and proper injunctive relief pursuant to 35 U.S.C. § 283;
- C. An award to Varex of such past damages, not less than a reasonable royalty, as it shall prove at trial against Richardson that is adequate to fully compensate Varex for Richardson's infringement of the '692 patent and '317 patent;
- D. A determination that Richardson's infringement has been willful, wanton, and deliberate and that the damages against it be increased up to treble on this basis or for any other basis in accordance with the law;
- E. A finding that this case is "exceptional" and, on that basis, an award to Varex of its costs and reasonable attorneys' fees, as provided by 35 U.S.C. § 285;
- F. An accounting of all infringing sales and revenues, together with post-judgment interest and pre-judgment interest from the first date of infringement of the '692 patent and the '317 patent; and

G. Such further relief as the Court deems proper and just.

Respectfully submitted,

Dated: November 27, 2018

By: /s/ David H. Bluestone

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**ATTORNEYS FOR VAREX
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CERTIFICATE OF SERVICE

I hereby certify that a copy of Varex Imaging Corporation's Amended Complaint was filed with the Court's ECF system to provides service to all attorneys of record.

Dated: November 27, 2018

By: /s/ David H. Bluestone

David H. Bluestone